

## CLAIMS

1. Control system for controlling a packet switched communications network for forwarding data packets of a predetermined packet format, wherein a set  
5 of addresses having a predetermined address format are assigned to the network and wherein the network comprises a plurality of network nodes, which control system comprises

a connectionless control plane for enabling and controlling connectionless transportation of data packets through said network, and

10 a connection-oriented control plane for enabling and controlling connection-oriented transportation of data packets through said network, wherein a first subset of said addresses is associated with the connectionless control plane and a second subset of said addresses is associated with the connection-oriented control plane,

15 wherein the connectionless control plane is arranged to control the operation of the network nodes such that a packet having an address belonging to said first subset is forwarded through the network by a connectionless transport mode, and

wherein the connection-oriented control plane is arranged to control the  
20 operation of the network nodes such that a packet having an address belonging to said second subset is forwarded through the network by a connection-oriented transport mode.

2. The control system of claim 1,

25 wherein each network node comprises a switching table including a number of entries that associate a number of said addresses with a respective output location,

wherein the network nodes are arranged to forward a packet to the output location associated with the address of the packet,

30 wherein the connectionless control plane is arranged to control the contents of a first portion of a switching table of a network node, which first portion relates to said first subset of addresses, and

wherein the connection-oriented control plane is arranged to control the contents of a second portion of the switching table, which second portion relates to said second subset of addresses.

- 5     3. The control system of claim 2, wherein the connectionless and connection-oriented control planes are arranged to control the contents of the switching table of a network node by deciding which output port of the network node that is to be associated with which address in the switching table of the network node, such that the network node outputs a packet to the output  
10     port that is associated, in the switching table of the network node, with the address of the packet.
4. The control system of claim 1, wherein an address of said second subset of addresses represents a path label of a connection between a source node and  
15     a destination node established by the connection-oriented control plane.
5. The control system of claim 1, wherein said packet switched communications network is an Ethernet network, said predetermined packet format is the format of an Ethernet frame and said predetermined address  
20     format is the format of one of a destination address field, a source address field or a VLAN tag of the Ethernet frame.
6. The control system of claim 5, wherein said Ethernet network includes a self-configuration function for automatically configuring a connectionless  
25     network, and wherein said connection-oriented control plane is arranged to configure a connection-oriented network in said Ethernet network based on network information derived by said self-configuration function.
7. The control system of claim 1, wherein said packet switched  
30     communications network is an IP network, said predetermined packet format is the format of an IP packet and said predetermined address format is the format of an IP address.

8. The control system of claim 1, wherein the connection-oriented control plane is based on an MPLS control plane.

5 9. The control system of claim 1, wherein at least one of said connectionless and said connection-oriented control planes is implemented in a control node, which control node is arranged to communicate with said network nodes by means of at least one signaling interface.

10 10. The control system of claim 1, wherein at least one of said connectionless and said connection-oriented control planes is distributed between the network nodes.

15 11. The control system of claim 1, wherein said connectionless and said connection-oriented control planes are implemented by means of computer readable program instructions.

12. Packet switched communications system comprising a physical network infrastructure for forwarding data packets of a predetermined packet format, wherein a set of addresses having a predetermined address format are  
20 assigned to the network infrastructure and wherein the network infrastructure comprises a plurality of network nodes, said communications system further comprising a control system including

25 a connectionless control plane for enabling and controlling connectionless transportation of data packets through said network infrastructure, and

a connection-oriented control plane for enabling and controlling connection-oriented transportation of data packets through said network infrastructure; and

30 an address manager arranged to allocate a first subset of said addresses to the connectionless control plane, and a second subset of said addresses to the connection-oriented control plane,

the connectionless control plane being arranged to control the operation of the network nodes such that a packet having an address belonging to said first subset is forwarded through the network infrastructure by a

connectionless transport mode, and the connection-oriented control plane being arranged to control the operation of the network nodes such that a packet having an address belonging to said second subset is forwarded through the network infrastructure by a connection-oriented transport mode.

5

13. The packet switched communications system of claim 12,

wherein each network node comprises a switching table including a number of entries that associate a number of said addresses with a respective output location,

10 wherein the network nodes are arranged to forward a packet to the output location associated with the address of the packet,

wherein the connectionless control plane is arranged to control the contents of a first portion of a switching table of a network node, which first portion relates to said first subset of addresses, and

15 wherein the connection-oriented control plane is arranged to control the contents of a second portion of the switching table, which second portion relates to said second subset of addresses.

14. The packet switched communications system of claim 13, wherein the  
20 connectionless and connection-oriented control planes are arranged to control the contents of the switching table of a network node by deciding which output port of the network node that is to be associated with which address in the switching table of the network node, such that the network node outputs a packet to the output port that is associated, in the switching  
25 table of the network node, with the address of the packet.

15. The packet switched communications system of claim 12, wherein an address of said second subset of addresses represents a path label of a connection between a source node and a destination node established by the  
30 connection-oriented control plane.

16. The packet switched communications system of claim 12, wherein said network infrastructure is an Ethernet network infrastructure, said predetermined packet format is the format of an Ethernet frame and said

predetermined address format is the format of one of a destination address field, a source address field or a VLAN tag of the Ethernet frame.

5 17. The packet switched communications system of claim 16, wherein said Ethernet network infrastructure includes a self-configuration function for automatically configuring a connectionless network, and wherein said connection-oriented control plane is arranged to configure a connection-oriented network on said Ethernet network infrastructure based on network information derived by said self-configuration function.

10

18. The packet switched communications system of claim 12, wherein said network infrastructure is an IP network infrastructure, said predetermined packet format is the format of an IP packet and said predetermined address format is the format of an IP address.

15

19. The packet switched communications system of claim 12, wherein at least one of said connectionless and said connection-oriented control planes is implemented in a control node, which control node is arranged to communicate with said network nodes by means of at least one signaling interface.

20

20. The packet switched communications system of claim 12, wherein at least one of said connectionless and said connection-oriented control planes is distributed between the network nodes.

25

21. Packet switched communications system comprising an Ethernet network infrastructure for forwarding Ethernet frames based on the contents of a predetermined address field of the Ethernet frames and wherein the network infrastructure comprises a plurality of network nodes, which communications system further comprises a control system including a connection-oriented control plane for enabling and controlling connection-oriented transportation of data packets through said Ethernet network infrastructure, wherein a subset of addresses of the address space of the predetermined address field is associated with the connection-oriented

30

control plane in order to allow use of the addresses of the subset as path labels of connections established by the connection-oriented control plane, and wherein the connection-oriented control plane is arranged to control the operation of the network nodes such that a packet having an address  
5 belonging to said subset in the predetermined address field is forwarded through the Ethernet network infrastructure by a connection-oriented transport mode.

22. The packet switched communications system of claim 21,  
10 wherein each network node comprises a switching table including a number of entries that associate a number of said addresses with a respective output location,  
wherein the network nodes are arranged to forward a packet to the output location associated with the address of the packet, and  
15 wherein the connection-oriented control plane is arranged to control the contents of a portion of a switching table of a network node, which portion relates to said subset of addresses.

23. The packet switched communications system of claim 22, wherein the  
20 connection-oriented control plane is arranged to control the contents of the switching table of a network node by deciding which output port of the network node that is to be associated with which address in the switching table of the network node, such that the network node outputs a packet to the output port that is associated, in the switching table of the node, with the  
25 address of the packet.

24. The packet switched communications system of claim 21, wherein said Ethernet network includes a self-configuration function for automatically configuring a connectionless network, and wherein said connection-oriented  
30 control plane is arranged to configure a connection-oriented network on said Ethernet network infrastructure based on network information derived by said self-configuration function.

25. The packet switched communications system of claim 21, wherein the predetermined address field is one of a destination address field, a source address field or a VLAN tag of the Ethernet frames.

5 26. The packet switched communications system of claim 21, wherein the connection-oriented control plane is based on an MPLS control plane.

27. The packet switched communications system of claim 21, wherein said connection-oriented control plane is implemented in a control node, which  
10 control node is arranged to communicate with said network nodes by means of at least one signaling interface.

28. The packet switched communications system of claim 21, wherein said connection-oriented control plane is distributed between the network nodes.  
15

29. The packet switched communications system of claim 21, wherein said connection-oriented control plane is implemented by means of computer readable program instructions.